

147 atgtcggactacgagaacgatgacgagtgctggaacgtcctggag CARD domain  
M S D Y E N D D E C W N V L E

192 ggcttccgggtgacgctcacctcggtcatcgacccctcacgcatc  
G F R V T L T S V I D P S R I

237 acaccttacctgcggcagtgcaaggtcctgaaccctgatgatgag  
T P Y L R Q C K V L N P D D E

282 gagcaggtgctcagcgaccccaacctgggtcatccgcaaacggaaa  
E Q V L S D P N L V I R K R K

327 gtgggtgtgctcctggacatcctgcagcgacccggccacaagggc  
V G V L L D I L Q R T G H K G

372 tacgtggccttctcagagagcctggagctctactaccgcagctg  
Y V A F L E S L E L Y Y P Q L

417 tacaagaaggtcacaggcaaggagccggcccgctcttctccatg  
Y K K V T G K E P A R V F S M

462 atcatcgacgctccggggagtcaggcctgactcagctgctgatg  
I I D A S G E S G L T Q L L M

507 actgaggtcatgaagctgcagaagaaggtgcaggacctgaccgag  
T E V M K L Q K K V Q D L T A

552 ctgctgagctccaaagatgacttcatcaaggagctgcgggtgaag  
L L S S K D D F I K E L R V K

597 gacagcctgctgcgcaagcaccaggagcgtgtgcagaggctcaag FILAMENT domain  
D S L L R K H Q E R V Q R L K

642 gaggagtgcgaggccggcagccgagctcaagcgctgcaaggag  
E E C E A G S R E L K R C K E

687 gagaactacgacctggccatgcgctggcgaccagagtgaggag  
E N Y D L A M R L A H Q S E E

732 aaggggcgccgctcatgcggaaccgtgacctgcagctggagatt  
K G A A L M R N R D L Q L E I

777 gaccagctcaagcacagcctcatgaaggccgaggacgactgcaag  
D Q L K H S L M K A E D D C K

822 gtggagcgcaagcacagctgaagctcaggcacgcatggagcag  
V E R K H T L K L R H A M E Q

867 cggcccagccaggagctgctgtgggagctgcagcaggagaaggcc  
R P S Q E L L W E L Q Q E K A

912 ctgctccaggcccggtgcaggagctggaggcctccgtccaggag  
L L Q A R V Q E L E A S V Q E

957 gggaaagctggacaggagcagcccctacatccaggtactggaggag  
G K L D R S S P Y I Q V L E E

1002 gactggcgcgaggcgctgcgggaccaccaggagcaggccaacacc  
D W R Q A L R D H Q E Q A N T

1047 atcttctccctgcgcaaggacctccgcccaggcgaggcccgacgc  
I F S L R K D L R Q G E A R R

1092 ctccggtgcatggaggagaaggagatgttcgagctgcagtgcctg  
L R C M E E K E M F E L Q C L

1137 gcactacgtaaggactccaagatgtacaaggaccgcatcgaggcc  
A L R K D S K M Y K D R I E A

1182 atcctgtcgcagatggaggaggtcgccattgagcgggaccagagc  
I L L Q M E E V A I E R D Q S

1227 acacaaatggaggggctgtga 1247  
T Q M E G L \*

FIGURE 1

1 atggatgactacatggagacgctgaaggatgaagaggacgccttg CARD domain  
M D D Y M E T L K D E E D A L  
46 tgggagaatgtggagtgttaaccggcacatgctcagccgctatatac  
W E N V E C N R H M L S R Y I  
91 aaccctgccaagctcacgcccctacctgcgtcagtgtaaggtcatt  
N P A K L T P Y L R Q C K V I  
136 gatgagcagqatgaagatgaagtgttaattgcccttatgctgcca  
D E Q D E D E V L N A P M L P  
181 tccaagatcaaccgagcagccggtgttgacattctacatacc  
S K I N R A G R L L D I L H T  
226 aaggggcaaaaggggctatgtggtctcttcttgagagccctagaattt  
K G O R G Y V V P L E S L E F  
271 tattaccagaactgtacaaactgtgactgggaaagagccact  
Y Y P E L Y K L V T G K E P T  
316 cggagattctccaccattgtggtggaggaaggccacgagggcctc  
R R F S T I V V E E G H E G L  
361 acgcacttctgtatgaacgaggtcatcaagctgcagcagcagatg  
T H F L M N E V I K L Q Q Q M ERM (ezrin) domain  
406 aagggcaagggacctgcaacgctgcgagctgctggccaggttgccg  
K A K D L Q R C E L L A R L R  
451 cagctggaagatgagaagaaagcagatgacgctgacgcgcgtggag  
Q L E D E K K Q M T L T R V E  
496 ctgctaaccctccaggaagcgtactacaagatgaaggaagagccg  
L L T F Q E R Y Y K M K E E R  
541 qacagctacaatgacgagctggtcaaggtgaaggacgacaactac  
D S Y N D E L V K V K D D N Y  
586 aacttagccatgcgctacgcacagctcagtgaggagaagaacatg  
N L A M R Y A Q L S E E K N M  
631 qcqgtcatgaggaagccgagacctccaactcgaatcgaatcagcta  
A V M R S R D L Q L E I D Q L  
676 aagcaccggttgataaagatggaaggaagatgtaagctggaagga  
K H R L N K M E E E C K L E R  
721 aatcagctctctaaaactgaagaatgacattgaaaatcggcccaag  
N Q S L K L K N D I E N R P K  
766 aaggagcaggttcttqgaactggaagcgggagaatgaaatgctgaag  
K E Q V L E L E R E N E M L K  
811 accaaaaaccaggaagctgcagtcctcatccagggcgggaagcgc  
T K N Q E L Q S I I Q A G K R  
856 agcctgccaagactcagacaagccatcctggacatcttqgaacac  
S L P D S D K A I L D I L E H  
901 gaccgcaaggaagccctggaagacaggaagagctggtcaacag  
D R K E A L E D R Q E L V N R  
946 atctacaacctgcaggaaggaagcccgccaggaaggaagctgcga  
I Y N L Q E E A R Q A E E L R  
991 gacaagtacctggaaggaaggaaggaagcctggaagctcaagtgtc  
D K Y L E E K E D L E L K C S  
1036 accctgggaaggaagctgtgaaatgtacaagcaccgcatgaacag  
T L G K D C E M Y K H R M N T  
1081 gtcattgctgcaagctggaaggaaggtggaagcgggagcgggaccagga  
V M L Q L E E V E R E R D Q G

FIGURE 2A

1126 caqgctgtgqcccttccagggacactgcacataaaqctctcaacaca  
Q A V A F Q G H C I K A L N T

1171 gaqccctgccactagcaaaqggtcggaccatcggctctgtgacgcq  
E P A T S K G R T I G S V I A

1216 ttaatgaagaagqcccttccactcccagatgaagctcaqacacag  
L M K K A F H S R D E A Q T Q

1261 tactcgcagtgccttaatcgaaaagacaaqtacaggaagcagatc  
Y S Q C L I E K D K Y R K Q I

1306 cgcgagctggaggaagaacacgagatgagatcagatgggtg  
R E L E E K N D E M R I E M V

1351 cggcgggaggcctgcacgtcaacctggagagcaagctgcggcgc  
R R E A C I V N L E S K L R R

1396 ctctccaaggacagcaacaacctggaccagagtctgccaggaac  
L S K D S N N L D Q S L P R N

1441 ctgccagtaaccatcatctctcaggactttggggatgccagcccc  
L P V T I I S Q D F G D A S P

1486 aggaccaatgggtcaagaagctgacgattcttccacctcggaggag  
R T N G Q E A D D S S T S E E

1531 tcacctgaagacagcaagtacttctgcctaccatccgccccag  
S P E D S K Y F L P Y H P P Q

1576 cgcaggatgaacctgaagggtcatccagctgcagagagccaaatcc  
R R M N L K G I Q L Q R A K S

1621 cccatcagcctgaagcgaacatcagattttcaagccaaggggcac  
P I S L K R T S D F Q A K G H

1666 gaggaagaaggcagcgagccagccctagctcctgcggatctctg  
E E E G T D A S P S S C G S L

1711 cccataccaactccttcaccaagatgcccccccgagcgcgagc  
P I T N S F T K M P P R S R S

1756 agcatcatgtcaatcaccgcccagccccgggaaacgactccatc  
S I M S I T A E P P G N D S I

1801 gtcagacgctacaaggaggacgcgccccatcgcagcacagtgcga  
V R R Y K E D A P H R S T V E

1846 gaagacaatgacagcggcggtttgacgccttagatctggatgag  
E D N D S G G F D A L D L D E

1891 ctggcagcaggggagactgtggctcagagtcctccagggtgccc  
L A A G E T V A Q S P P G V P

1936 tgccagccccctctcttccagggtccccccagcctttgccagcta  
C Q P P L F Q G S P S L C Q L

1981 aggctgccaaccgatgaaacgaaagatgagtggctcctcctaata  
R L P T D E T K D E W S S L M

2026 gggaagcatcagcgctaccaagtgttaaagagagatgacagtcac  
G K H Q R Y Q V L K R D D S H

2071 gaacgctactccttcggaccctcctccatccactcctcctcctcc  
E R Y S F G P S S I H S S S S

2116 tcccaccaatccgagggcctggatgcctacgacctggagcaggtc  
S H Q S E G L D A Y D L E Q V

2161 aacctcatgttcaggaaqgtctctcttggaaaagacccttccggcct  
N L M F R K F S L E R P P R P

2206 tcqgtcacctctgtgqggcacgtgcgqggcccaagqccctcqqtg  
S V T S V G H V R G P G P S V

2251 cagcacacgacqctgaatggcagacgcctcacctcccagctcacc  
Q H T T L N G D S L T S Q L T

2296 ctgctgqggggcaacgcgcgagggagcttgcgtgcactcgggtcaa  
L L G G N A R G S F V H S V K

2341 cctgqctctctgqccgaqaaagccgacctccgtgagggccaccag  
P G S L A E K A G L R E G H Q

2386 ctgctgctgctagaagqctgcacatccgagggcgaagggcagagtgc  
L L L L E G C I R G E R Q S V

2431 ccgttgacacatgcaccaaagaggaagccactggaccatccag  
P L D T C T K E E A H W T I Q

2476 aggtgcagcggccccctcacgctgcactacaaggtcaaccacgaa  
R C S G P V T L H Y K V N H E

2521 gccccagcagaaaatccgtgggcctgcagaatatgatgtgggcagc

PDZ domain

FIGURE 2B

A Q Q K I R G P A E Y D V G S  
2566 acctccaaagccccggagctgcgagcagcacagccctgcaagtct  
T S K A R S C A A A Q P C K S  
2611 ggaattccagggaaagaaagttcattccggcaggggtaccggaag  
G I P G K E S S F R Q G Y R K  
2656 ctggtgaaggacatggaggacggcctgatcacatcgggggactcg  
L V K D M E D G L I T S G D S  
2701 ttctacatccggctgaacctgaacatctccagccagctggacgcc  
F Y I R L N L N I S S Q L D A  
2746 tgcaccatgtccctgaagtgtgacgatgttggtgcacgtccgtgac  
C T M S L K C D D V V H V R D  
2791 accatgtaccaggacaggcagcagtggtgtggtgcgcgggtcgac  
T M Y Q D R H E W L C A R V D  
2836 cctttcacagaccatgacctggatatgggcaccatacccagctac  
P F T D H D L D M G T I P S Y  
2881 agccgagcccagcagctcctcctggtgaaactgcagcgctgatg  
S R A Q Q L L L V K L Q R L M  
2926 caccgaggcagccggaggaggttagcggcaccacacacccctg  
H R G S R E E V D G T H H T L  
2971 cgggcactccggttcgtcagcaggtccgagaacaagtataagcgg  
R A L R F V S R S E N K Y K R  
3016 atgaacagcaacgagcgggtccgcacatctcggggagtcgcgta  
M N S N E R V R I I S G S P L  
3061 gggagcctggccccgtcctcgctggacgccaccaagctcttgact  
G S L A R S S L D A T K L L T  
3106 gagaagcaggaagagctggaccctgagagcgagctgggcaagaac  
E K Q E E L D P E S E L G K N  
3151 ctcagcctcatccctacagcctggtacgcgcttctactgcgag  
L S L I P Y S L V R A F Y C E  
3196 cgccgcggccccgtgctcttcacaccacccgtgctggccaagacg  
R R R P V L F T P T V L A K T  
3241 ctggtgcagaggctgctcaactcgggaggtgccatggagttcacc  
L V Q R L L N S G G A M E F T  
3286 atctgcaagtcagatatcgtcacaagagatgagttcctcagaagg  
I C K S D I V T R D E F L R R  
3331 cagaagcaggagaccatcatctactcccgagagaagaacccaac  
Q K T E T I I Y S R E K N P N  
3376 gcgttcgaatgcacgcgccctgcccaacattgaagctgtggccgcc  
A F E C I A P A N I E A V A A  
3421 aagaacaagcactgcctgctggaggctgggatcggtgcacaaga  
K N K H C L L E A G I G C T R  
3466 gacttgatcaagtccaacatctaccccatcgctgctcttcacccg  
D L I K S N I Y P I V L F I R  
3511 gtgtgtgagaagaacatcaagaggttcagaaagctgctgccccga  
V C E K N I K R F R K L L P R  
3556 cctgagacggaggaggttcctgcgcgtgtgccggctgaaggag  
P E T E E E F L R V C R L K E  
3601 aaggagctggaggccctgccgtgcctgtacgccacgggtggaacct  
K E L E A L P C L Y A T V E P  
3646 gacatgtggggcagcgtagaggagctgctccgcgttgtcaaggac  
D M W G S V E E L L R V V K D  
3691 aagatcggcaggagcagcgcaagaccatctgggtggacgaggac  
K I G E E Q R K T I W V D E D  
3736 cagctgtga 3744  
Q L \*

FIGURE 2C

1 atgggggaactgtgccgcagggactccgcactcacggcactggac  
M G E L C R R D S A L T A L D  
46 gaggagacactgtgggagatgatggagagccaccgccacaggatc  
E E T L W E M M E S H R H R I CARD domain

91 gtacgctgcacatctgccccagccgcctcacccttacctgcgccag  
V R C I C P S R L T P Y L R Q

136 gccaaaggtgctgtgccagctggacgaggaggaggtgctgcacagc  
A K V L C Q L D E E E V L H S

181 ccccggtcaccaacagcgcctatgcggggccggcacttgctggat  
P R L T N S A M R A G H L L D

226 ttgctgaagactcgagggaagaacggggccatcgcccttcctgga  
L L K T R G K N G A I A F L E

271 agcctgaagttccacaaccctgacgtctacaccctggtcaccggg  
S L K F H N P D V Y T L V T G

316 ctgcagcctgatgttgacttcagtaacttttagcggtgagagctcc  
L Q P D V D F S N F S G E S S

361 gactttgacggtttggcaggcacttctaggaacctcaggctcctg  
D F D G L A G T S R N L R L L

406 gtaaccccagnn 417  
V T P X

FIGURE 3

GI "10436238"

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1 msdyenddec wnvlegfrvt ltsvidpsri tpylrqckvl npddeeqvls dpnlvirkrk
61 vgvllldilqr tghkgyvafl eslelyypql ykkvtgkepa rvfsmiidas gesgltqlm
121 tevmklqkkv qdltallssk ddfikelrvk dsllrkhqer vqrlkeecae gsrelkrcke
181 enydlamrla hqseekgaal mnrndlqlei dqlkhsmlka eddckverkh tlklrhameq
241 rpsqellwel qqekallqar vqeleasvqe gkldrsspyi qvleedwrqa lrdhqeant
301 ifslrkdlrq gearrlrcme ekemfelqcl alrkdsksmyk drieaillqm eeavaierdqs
361 tqmegl

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GI "10436237"

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1 atcatcagga agtgcacagg cgtccggcgt gctcctccct ccctgcagcc ccgggcagca
61 tctcccagag gctccgcggc ccaggctcct ggtgtgtctg cagtgcaggt ggctcctgga
121 agaccctcag cctgcctgct gaggccatgt cggactacga gaacgatgac gagtgtgga
181 acgtcctgga gggcttccgg gtgacgtca cctcggatcat cgaccctca cgcacacac
241 cttacctgag gcagtgaag gtcctgaacc ctgatgatga ggagcaggtg ctgagcagcc
301 ccaacctggt catccgcaa cggaaagtgg gtgtgctcct ggacatcctg cagcggaccg
361 gccacaagg ctacgtggcc ttctcogaga gctggagct ctactaccg cagctgtaca
421 agaaggtcac aggcaaggag cgggcccgcg tcttctccat gatcatcgac gcgtccgggg
481 agtcaggcct gactcagctg ctgatgactg aggtcatgaa gctgcagaag aaggtgcagg
541 acctgaccgc gctgctgagc tccaaagatg acttcatcaa ggagctgagg gtgaaggaca
601 gcctgctgag caagcaccag gagcgtgtgc agaggctcaa ggaggagtgc gaggccggca
661 gccgcgagct caagcgtgac aaggaggaga actacgacct ggccatgagc ctggcgaccc
721 agagtgagga gaaggcgcc gcgctcatgc ggaaccgtga cctgcagctg gagattgacc
781 agtcaagca cagcctcatg aaggccgagg acgactgcaa ggtggagcgc aagcacagc
841 tgaagctcag gcacgccatg gagcagcggc ccagccagga gctgctgtgg gagctgcagc
901 aggagaagg cctgctccag gcccggtgc aggagctgga ggccctccgtc caggagggga
961 agctggacag gagcagcccc tacatccagg tactggagga ggactggcgg caggcgctgc
1021 gggaccacca ggagcaggcc aacaccatct tctccctgag caaggacctc cgccaggggc
1081 agggccgagc cctccggtgc atggaggaga aggagatgtt cgagctgcag tgctggcac
1141 tacgtaagga ctccaagatg tacaaggacc gcatcgaggc catcctgctg cagatggagg
1201 aggtcgccat tgagcgggac cagagcacac aaatggaggg gctgtgacca gctccgcgc
1261 ccagcggtt gacgtcctcc ggagcctctg cttggagttg ggcgccggg ccgaggggcc
1321 agggcaagct tggggccctc actgagggtc ggccctgtgc tgtccgtca ggccatagcc
1381 acgcgggagg agctgcacgc acagcacgcc cggggcctgc aggagaagga cgcgctgcgc
1441 aagcaggtgc gggagctggg cgagaaggcg gatgagctgc agctgcaggt gttccagtgt
1501 gaggcgcagc tactggccgt ggaggggcag ctcaggcggc agcagctgga gacgtcgtc
1561 ctgagctccg acctggaaga tggctcacc aggaggtccc aggagctctc actccccag
1621 gacctggagg acaccagct ctcagacaaa ggctgccttg ccggcgggg gagcccgaaa
1681 cagccctttg cagctctgca ccaggagcag gttttgcgga acccccatga cgcaggcctg
1741 agcagcgggg agccgcccga gaaggagcgg cggcgccatc aagagagttt tgagaactac
1801 cgcaggaagc gcgcccctag gaagatgcag aaaggatggc ggcaggggga ggaggaccg
1861 gagaacacca cgggcagcga caacaccgac actgagggt cctagccgca gcagacttc
1921 ccgagccgtc gctgacttgg cctggaacga ggaatctggt gccctgaaag gccagccgg
1981 actgccggg attggggcg tttgttaagc ggcactcatt ttgcggaggc catgcgggtg
2041 ctaccacccc ccatgcacac gccatctgtg taacttcagg atctgttctg ttccaccatg
2101 taacacacaa tacatgcatg cattgtatta gtgttagaaa acacagctgc gtaataaac
2161 agcacgggtg acccgc

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FIGURE 4

CARD10X ESTs

GI"9094656"

GAGAGGCTCCGCGGCCAGGCTCCTGGTGTGTCTGCAGTGCAGGTGGCTCCTGGAAGACC  
CTCAGCCTGCCTGCTGAGGCCATGTTTGACTACGAGAACGATGACGAGTGTGGAGCGTC  
CTGGAGGGCTTCCGGGTGACGCTCACCTCGGTATCGACCCCTCACGCATCACACCTTAC  
CTGCGGCAGTGCAAGGTCTGAACCCGATGATGAGGAGCAGGTGCTCAGCGACCCCAAC  
CTGGTCATCCGCAAACGGAAAGTGGGTGTGCTCCTGGACAT

GI"7132200"

GGGACAGCCTGCTCCGCAAGCACCAAGAGCGGGTGCAGAAGATGAGGGAGGAGGGACA  
GTCTAAGCAAGGAGCTGCGGAAGTGCAAGGATGAGAACTACAACCTGGCAATGAGCTATG  
CCAGACAGAGCGAGGAGAAGAGCAGTGCCCTCATGAAGAACAGGGACCTGCTCCTAGAGA  
TTGATAGCTTGAAGCATAGCCTCATGAAGGTGAGGACGACTGCAAACTAGAGCGTAAGC  
ACTCGATGAAACTGAAGCATGCCATAGAACAACGTCCGAGCCATGAAGTGATGTGGGAGA  
TCCAGCAGGAGAAGGAGCTGCTTTTGGCCAAGAATCAGGAGCTGGAGAACACTCTTCAGG  
TTGCCAGGGAACAGAATTGGAGACGAGTCTCTCCCATGAGACTGTGCAGAATGACTGCA  
GCCAGGTGCTGGAGCGCCAGGACCTGCTGAACACCTGTACCACCTTCGCAAGGAGCTGC  
CCCAAGCCGAGGTGCTTCGAGACAAGTTCGAGGAGTGCAGCTCAGCCCACGAGGAGCTGT  
CCGAGAAGGAGCGGAGGAGGATGAAGGACTGCTTTGAGCGTTACCGCAGGAAGCGCGCC  
TGCGCAGAGCGCCCGGGCCCCGAGGCCGACTGGGAGCCGAGCACGGGCAGC  
GACAACACGGACACCGAGGGCAGCTAGGGGCCGGCCGAGCTTTCGAGTTTGCAGCTGGAT  
CCGTCAATAAACAG

GI"5884878"

TGAACACCCTGTACCACCTTCGCAAGGAGCTGCGCCAAGCCGAGGTGCTCCGAGACAAGT  
ATGCAGAGGAAAAAGAAATACTTGAACACAGTGCACATCTCTGAGGAAGGACTCCCAGA  
TGTATAAAAAACGGATGGAAGCTGTCTTAGAGCAGATGGAGGAAGTGGCTTCGGAAAGAG  
ACCAGGCACTGTGACCAGAGAACAGTTCTACCCACAGTACTCCAAGAACCTTGTGAGA  
GGGACACTTATCGGAAGCAGATTTCGGGAGCTGGGGGAGCGATGCGATGAGCTGCAGCTGC  
AGCTCTTCCAAAAGGAGGGTCAGCTACTGGCTACTGAAGCCAAGCTGAAAAGACTGCAAC  
TGGAGCTGCCTGCACTGACTTCTGACCTGGATGACACTCCTCCAGAGATCCCAGGTCTTA  
CTCTCATGGTCATCTAGACGAAGATCGCACCTGACTAAAAAAGACGCTGTTAAGGAAAAC  
CAGCAATCAGCATGCAAGAAACATCTGACGCAGATCACCCTTCGAGGATGCACTAACCA  
CAAGACTTCGAGAAGACGGAGAGATAAGGATGCTTGAGCGTACGAGTCGGCCGATCCGCG  
CCCCCCTCCGCGCTCCTTCCGTGGCTCGT

FIGURE 5

CARD11X ESTs

GI"6926669"

CACGAGGGAATGTACAAGCACCGCATGAACACGGTCATGCTGCACCTGGAGGAGGTGGA  
GCGGGAGCGGGACCAGGCCTTCCACTCCCGAGATGAAGCTCAGACACAGTACTCGCAGTG  
CTTAATCGAAAAGGACAAGTACAGGAAGCAGATCCGCGAGCTGGAGGAGAAGAACGACGA  
GATGAGGATCGAGATGGTGCGGCGGGAGGCCTGCATCGTCAACCTGGAGAGCAAGCTGCC  
GCGCCTCTCCAAGGACAGCAACCTGGACCAGAGTCTGCCCAGGAACCTGCCAGTAAC  
CATCATCTCTCAGGACTTTGGGGATGCCAGC

GI"6143407"

TTTTTTTTTTTTTCTCTCCTGCCTCCTTGGCCTTCGGACTCCTGCCCGCGCGCCCG  
CAGCCCCCTCCCGGCCCTGCAGCCCCCTGGGCGGGCGGCCCTCGGAGGACGGCTCCGG  
GCCCCGGGGGACGGAGGGCCTGGTCGCCTGGAGGAAGCCGGAGGCCTGCGTGGAGGAGGC  
GCCCCGCGCAGCTGGCTGGCGGAGCATGAGCGCCCCAGATCCCAAGCACTGCAAGTCCAG  
ATGCAACGGGAGCCTGGCTCAAGGGACGACAAGATCCAGCCGGAAGTGTAGAAGTCACA  
CCCCAATGGCGGGATAGCAGCCCCCTGTGTGTGAGCACCCCTCCATGCCAGGAGGAGGGCC  
AGAGATGGATGACTACATGGAGACCCCTGAAGGATGAAGAGGACCCCTGTGGGACAATGT  
GGAGTGTAAACCGGCACATGCTCAACCGCTATATCAACCTGCCAAGCTCACGCCCTAC

GI"2785620"

GCAGCCCCCTCCCGGCCCTGCAGCCCCCTGGCGTGCGGGCCATCGGAGGACGGCTCCGGG  
CCCCGGGGGACGGAGGGCCTGGTCGCCTGGAGGAAGCCGGACGCTGCGTGGAGGAGCGC  
CCCCGGTCTGGTCTGGCGGACGATGAGCGCCCCAGATCCCAAGCACTGCAAGTCCAGATG  
CAACGGGAGCCTGGCTCAAGGGACGACAAGATCCAGCCGGAAGTGTAGAAGTCACACCC  
CAATGGCGGGATAGCAGCCCCCTGTGTGTGATCACCCCTCCATGCCAGGAGGAGGGCCAGA  
GATGGATGACTACATGGAGACGCTGAATGATGAAGAGGACGCTTGTGGGAGAATGTGGA  
GTGTAACCGGCACATGCTCAGCCGCTATATCAACCC

GI"1838222"

AAAAGGAGGAGGGCCAGAGATGGATGACTACATGGAGACGCTGAAGGATGAAGAGGACGC  
CTTGTGGGTGAATGTGGAGTGTAACCGGCACATGCTCAGCCGGTCTCACGAATTCCGCT  
GAGTTCTCACGAATTCCGCTGAGGTCTCACGAATTCCGCTGA

GI"6927709"

CACGACGACGGACGCCAGCCCTAGCTCCTGCGGATCTCTGCCCATCACCAACTCCTTCAC  
CAAGATGCAGCCCCCGGAGCCGAGCAGCATCATGTCAATCACCGCCGAGCCCCCGGG  
AAACGACTCCATCGTCAGACGCTACAAGGAGGACGCGCCCATCGCAGCACAGTCGAAGA  
AGACAATGACAGCGGCGGGTTTGACGCCTTAGATCTGGATGATGACAGTCACGAACGCTA  
CTCCTTCGGACCCTCCTCCATCCACTCCTCCTCCTCCTCCACCAATCCGAGGGCCTGGA  
TGCCTACGACCTGGAGCAGGTCAACCTCATGTTCAAGGAAGTTCTCTCTGGAAAGACCCCT  
CCGGCCTTCGGTCACCTCTGTGGGGCACGTTCCGGGGCCCAAGGCCCTCGGTGCAGCAC

FIGURE 6A



GI"9720543"

TCATCCCCCTACAGCCTGGTACGCGCCTTCTACTGCGAGCGCCGCCGCCCGTGTCTTCA  
CACCCACCGTGCTGGCCAAGACGCTGGTGCAGAGGCTGCTCAACTCGGGAGGTGCCATGG  
AGTTCACCATCTGCAAGTCAGATATCGTCACAAGAGATGAGTTCCTCAGAAGGCAGAAGA  
CGGAGACCATCATCTACTCCCGAGAGAAGAACCCCAACGCGTTCGAATGCATCGCCCCCTG  
CCAACATCGAAGCTGTGGCCGCCAAGAACAAGCACTGCCTGCTGGAGGCTGGGATCGGCT  
GCACAAGAGACTTGATCAAGTCCAACATCTACCCCATCGTGCTCTTCATCCGGGTGTGTG  
AGAAGAACATCAAGAGGTTTCAAGAGCTGCTGCCCCGACCTGAGACGGAGGAGGAGTTCC  
TGCGCGTGTGCCGGCTGAAGGAGAAGGAGCTGGAGGCCCTGCCGTGCTGTACGCCACGG  
TGGAACCTGACATGTGGGGCAGCGTAGAGGAGCTGCTCCGCGTTGTCAAGGACAAGATCG  
GCGAGGAGCAGCGCAAGACCATCTGGGTGGACGAGGACCAGCTGTGAGGCGGGCGCCCTG  
GCAGAGAGA

GI"9142863"

TCATCCCCCTACAGCCTGGTACGCGCCTTCTACTGCGAGCGCCGCCGCCCGTGTCTTCA  
CACCCACCGTGCTGGCCAAGACGCTGGTGCAGAGGCTGCTCAACTCGGGAGGTGCCATGG  
AGTTCACCATCTGCAAGTCAGATATCGTCACAAGAGATGAGTTCCTCAGAAGGCAGAAGA  
CGGAGACCATCATCTACTCCCGAGAGAAGAACCCCAACGCGTTCGAATGCATCGCCCCCTG  
CCAACATCGAAGCTGTGGCCGCCAAGAACAAGCACTGCCTGCTGGAGGCTGGGATCGGCT  
GCACAAGAGACTTGATCAAGTCCAACATCTACCCCATCGTGCTCTTCATCCGGGTGTGTG  
AGAAGAACATCAAGAGGTTTCAAGAGCTGCTGCCCCGACCTGAGACGGAGGAGGAGTTCC  
TGCGCGTGTGCCGGCTGAAGGAGAAGGAGCTGGAGGCCCTGCCGTGCTGTACGCCACGG  
CGGTGGAACCTGACATGTGGGGCAGCGTAGAGGAGCTGCTCCGCGTGTGAGGACAGACGG  
CGAGAGCAGCGCAAGA

GI"1761194"

GCTCCTTCAGTTCGTCAGCAGGTCCGAGAACAAGTATAAGCGGATGAACAGCAACGAGCG  
GGTCCGATCATCTCGGGGAGTCCGCTAGGAGCCTGGCCCGGTCTCGCTGGACGCCACCA  
AGCTCTTGACTGAGAAGCAGGAAGAGCTGGACCCCTGAGAGCGAGCTGGGCAAGAACCTCA  
GCCTCATCCCCCTACAGCCTGGTACGCGCCTTCTACTGCGAGCGCCGCCGCCCTGTGCTCT  
TCACACCCACCGTGCTGGCCAAGACGCTGGTGCAGAGGCTGCTCAACTCGGGAGGTGCCA  
TGGAGTTCACCATCTGCAAGTCAGATATCGTCACAAGAGATGAGTTCCTCAGAAGGCAGA  
AGACGGAGACCATCATCTACTCCCGAGAGA

GI"8151878"

AGAGACTTGATCAAGTCCAACATCTACCCCATCGTGCTCTTCATCCGGGTGTGTGAGAAG  
AACATCAAGAGGTTTCAAGAGCTGCTGCCCCGGCCTGAGACGGAGGAGGAGTTCTGCGC  
GTGTGCCGGCTGAAGGAGAAGGAGCTGGAGGCCCTGCCGTGCTGTACGCCACGGTGGAA  
CCTGACATGTGGGGCAGCGTAGAGGAGCTGCTCCGCGTTGTCAAGGACAAGATCGGCGAG  
GAGCAGCGCAAGACCATCTGGGTGGACGAGGACCAGCTGTGAGGCGGGCGCCCTGGGCAG  
AGAGACTCTGTGGCGCGGGGCATCCTATGAGGCAGGCACCCTGGGCAGAGAGATGTAGTG  
GGTGCGGGGGGATCCTGTGGCCCCACAGAGCTGCCCCAGCAGACGCTCCGCCCCACCCGGT  
GATGGAGCCCCGGGGGACAGTCGTGCGCTGGGGAGGAGCAGGGTACAGCCCATTCCCCCA  
GCCCTGGCTGACCTGGCCTAGCAGTTTTTGGCCCTGCTGGCCTTAGCAGGGAGACAGGGGA  
GCAAAGAACGCCAAGCCGGGAGGCCCAAGCCAGCCGGGCTCTCGAGGGGGGGCCCGGTCC  
CCATTTTGGCCTTTATGAGC

FIGURE 6B

GI"2007639"

AAGAGACTTGATCAAGTCCAACATCTACCCCATCGTGCTCTNTCATCCGGGTGTGTGAGA  
AGAACATCAAGAGGTTTCAGAAAGCNGCTGCCCCGGCCTGAGACGGAGGNGNAGTTCCTGC  
GCGTGTGCCGGCTGAAGGNGAAGGAGCTGGAGGCCCTGCCGTGCCTGTACGCGACGGTGG  
AACCTGACATGTGGGGCAGCGTAGAGGAGCTGCTCCGCGTTNTATAAGGACAAGATCGGT  
GAGNAGCAGCGCAAGACCATCTNGGTAGACGAGGACCAGCTTT

GI"8042493"

GTGTACTGCCTTCTGAGGAACTCATCTCTGTGACGATATCTGACTTGCAGATGGTGAAC  
CCATGGCACCTCCCGAGTTGAGCAGCCTCTGCACCAGCGTCTTGGCCAGCACGGTGGGTG  
TGAAGAGCACGGGCCGGCGCTCGCAGTAGAAGGCGGTACCAGGCTGTAGGGGATGA  
GGCTGAGGTTCTTGCCAGCTCGCTCT

GI"2079290"

GACTTGATCAAGTCCAACATCTACCCCATCGTGCTCTTCATCCGGGTGTGTGAGAAGAAC  
ATCAAGAGGTTTCAGAAAGCTGCTGCCCCGGCCTGAGACTGGAGGAGGAGTTCCTGCGCGT  
GTGCCGGCTGAAGGAGAAGGAGCTGGAGGCCCTGCGATGCCTGTACGCCACGGTGGAAAC  
TGACATGTGGGG

GI"7044777"

GAAATAATAATACATTTTAAATGCAAGAGAAATCATAGCCTGGTACACACCCCTTCCCCGA  
TCTGTCTCGCTGGGGATGTGTTTATGGTGAGTGTGTCCCCAGGACTGGTAGTCACCTGG  
CTGTCCGGGTCCCCGCCCTACTGGCGGCAGCATGCCTGTCCCCAGCATTACATTCAACTG  
CTGCTCTGGCTCTCGAGAGGCCGGCTGGCCTCNGGCCTTCCGGCTTGGCGTTCTTTGCTC  
CCCTGTCTCCCTGCTAAGGCCAGCAGGGCCAAACTGCTAGGCCAGGTACAGCCAGGGCTGG  
GGGAATGGGCTGTACCCTGCTCCTCCCCAGGCACGACTGTCCCCCGGGGCTCCATCACC  
GGGTGGGGCGGAGCGTCTGCTGGGGCAGCTCTGTGGGCCACAGGATCCCCCGCACCCAC  
TGCATCTCTCTGCCCATGGTGCCTGCCTCATAGGATGCCCCGCGCCACAGAGTCTATATG  
TCCAGGGCGCCCGCTCACAGCTGGTCCCTCGTCCACCCAGATGGTCTTTCGCTGCTCCTC  
GCCGATCTTGTCTTGACATCGCGGAGCAGCTCCTTTACGCTGCCCCACATGTCAGGTGC  
CCCCG

FIGURE 6C

CARD 12X EST

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P-LJ 5100

GI"10316320"

TCATGCCCAGCTCCGTCCCACCCAGCAGCCCGCAGAGAAAGGAGGCAGCTGGCACCACAC  
TGGGCTTTGGAGACACTGCGGGGACTGTGGACCCCAACCCTGCTGCACGGAGCTCCTGCAA  
AAGCAAACCTGAGAACCCTTGGGTCTCTCCAGCGCCCAGCCATGGGGGAACTGTGCCGCAG  
GGACTCCGCACTCACGGCACTGGACGAGGAGACACTGTGGGAGATGATGGAGAGCCACCG  
CCACAGGATCGTACGCTGCATCTGCCCCAGACGACATTAACCCCTATACTGTGACGCACA  
GCGCCAGAGGCTGGCTGCTGACCATGGATGGACCGAGGAGGGAGGTTGCTGCACCAGCGC  
CCACGAGACATCAACAACAGACGCACACTGCGGGGCCGGGCACATAGCGTGGCCTCGCGC  
TAGAAAGACATCAGAGGAGAAAGAAGCGGGGGCCCACTCGCACTCACCGTGAGTAGACGC  
CATGCACAGTACCACCAAACCCATGAGCGCTACTACAACCCATGGGTACCAGGGCATGA  
CAGCCTGGATGCATAGACATAACAAGTAACCTTCTACTAGCCAGGTCCTCATGCGAAGACC  
ATCCCAAGCCTGACCCGACATGCCCTGGACATGGGGCCCACTACGCGCAGACCATGCAGC  
GAGAGACGCATGACACCAGGCAACAACGCGGGCCACGAACGCGAGCGTTGCCTGCATCGA  
CGGGCAGCGTTGGCCACAGACACGGAATTGCAGCGGAGCCACACGTGGCAGCCCCCTGAGG  
CCCGACGACACCCGGTGACCGAAGGGGGCCATGGCAACCACGACCTGGCAGGCTTGACAC  
ACCAAGCGCCATACCACGCGCGTGAAAGGGTACAGAGGCACCAACTACCCAGTGCAAGCG  
CAGTTCTTGCAAGGCGATGCCAAGGGAACGGCACGACATGACGACACCGCAGTACTCTGT  
GAGGAAACCATCTTAGCAAGATGACAGCCTTGACAGGAAACAACGACACGAAGTGCCTGT  
CTCGCAACGCATGACAGAAGACCTGTGCGATATAAAGTAAATGTGATACTAATAGAAAGC  
AAGAAGGTTGACACTGAAAGACACACATATGAGTATAACTCGAGTATGCAACGTGAACAT  
G

FIGURE 7